

AMENDMENTS TO THE DRAWINGS

The sheets of drawings submitted herewith include changes to Figures 1-17 and Table 6 (now labeled as Figure 18). These sheets (23 sheets, 18 figures) replace the original sheets of drawings including Figures 1-17 and Table 6.

REMARKS

The claims have been amended extensively for clarification. Applicants note with appreciation that there is no rejection over the art of claims 1-3, 5-9, 11-13, 15 and 17-18, or of 22-23 and 27 dependent on claim 18. As will be shown below, the rejection over the art of claims 19 and claims dependent thereon is due to an error in the formula in claim 19 which has been corrected.

Claim 1 has been amended for clarification as have claims dependent thereon. It is believed that the amendments dispose of the rejections of these claims for lack of clarity.

Information Disclosure Statement

Applicants appreciate the reminder. An IDS follows under separate cover.

Drawings

Figures 3, 4a, 7, 10-13, and 15-16 have been corrected to enhance clarity and to permit adequate reproduction. Table 6, originally filed as sheet 23/23 in the figures, has been properly labeled as Figure 18 and the specification amended accordingly. The enclosed replacement drawings correct these informalities.

For ease of reference, a complete set of formal replacement drawings (23 sheets, 18 figures) is submitted herewith. The undersigned hereby states that no new matter has been added. Favorable consideration of the enclosed drawings is respectfully requested. Please substitute the enclosed drawings for the previously submitted drawings and enter the associated amendments.

The Rejection Under 35 U.S.C. § 112

Claims 1-3, 5-15, 17 and 19-21 were rejected under this statutory section.

First, claim 1 has been amended so that “selective” oxidation is no longer set forth in the claim. Similarly, claim 2 has been amended to delete reference to the 6,7 vicinal diol group as unnecessary.

Claim 5 has been amended to read on polysaccharides “consisting of” sialic acid units.

Claim 12 specifies the reduction reaction intended.

As stated above, claim 19 was in error and has been corrected; the structure corresponds to the product shown in Figure 4A, but without the assumption, made in that figure, that the second saccharide from the reducing end is sialic acid.

It is believed that these amendments dispose of the indefiniteness rejections.

As stated now in claim 1, the process comprises first oxidizing the vicinal diol group in the non-reducing terminal saccharide to an aldehyde so it can be disposed of as a reactant in step b) thus preventing use of that aldehyde in the ultimate coupling reaction to a substrate. In step b), the aldehyde is reduced to an alcohol. The vicinal group no longer exists at the non-reducing terminus and step b) also accomplishes reducing the reducing terminal sialic acid unit to open the ring to obtain a vicinal diol group. In step c), since the vicinal diol group at the reducing terminus is the only one now readily available, the oxidizing step converts this to an aldehyde. The product of this conversion comprises an aldehyde group at the reducing terminal sialic acid.

Claim 18 was also confusing, in applicant’s view since the claim stated that the terminal unit at the reducing end includes an aldehyde moiety or a group OR; several of the OR groups themselves contain aldehyde moieties. It is believed that the claim has now been clarified.

As the Examiner kindly points out, claim 19 was not properly dependent on claim 18 as it envisioned a non-reducing terminus as opposed to a reducing terminus being converted to an

aldehyde. This has been corrected in the structure of claim 19. Claim 19 is now properly dependent from claim 18.

The Art Rejections

Claims 19-21, 25 and 28 were rejected as assertedly anticipated both by Jennings, *et al.*, (*J. Immunol.*) and by comparable work in Jennings, *et al.* (U.S. 4,356,170). As the Examiner correctly notes, in former 19, the structure would correspond to derivitization at the non-reducing terminus; the claim has now been corrected to read on derivitization at the reducing terminus, thus obviating the rejections over Jennings, *et al.*

As noted by Jennings (1981) on page 1013, at the top of the right-hand column, when polysialic acid is treated with periodate, as is done by Jennings,

The oxidation of the same 7- and 8-hydroxyl groups of the unlinked terminal non-reducing sialic residue is extremely fast and probably generates an aldehyde group at C7 of this residue. It is unlikely that the reducing terminal sialic acid residue would oxidize to any great extent under these conditions because it exists in a solution mainly in its pyranose ring form and as should would behave similarly to an interchain (sic, intrachain) residue.

Thus, Jennings teaches periodate reaction with polysialic acid resulting in an aldehyde at the non-reducing end which was erroneously shown previously in claim 19. The present inventors are able to provide a reactive aldehyde substantially exclusively at the reducing end since the reactive vicinal diol at the reducing terminus has been passivated. The resulting structure is that now shown in claim 19.

Double Patenting

Claims 18, 24 and 26 were rejected as provisional double patenting over claims 1 and 7-9 of publication No. 2006/0270830. Claim 1 in the '830 case may be an error. Reservation of this double-patenting rejection until this is resolved is respectfully requested.

Claims 19, 21, 25 and 28 were also provisionally rejected as double patenting over corresponding claims in U.S. serial Nos. 12/375,006; 12/375,008; and 12/375,010. It is believed that since claim 19 has been corrected, this rejection no longer applies.

Conclusion

Claims 1-18, 22-23 and 26-27 are believed free of the art. Any indefiniteness in these claims has been remedied. Claim 19 and its dependent claims which were rejected over the art contained an incorrect structure; upon correction of this structure, the rejections over the art and double-patenting rejections are believed obviated. Accordingly, applicants believe that claims 1-3, 5-15 and 17-28 are in a position for allowance and passage of these claims to issue are respectfully requested.

Should minor wording issues remain that could be resolved by phone, a telephone call to the undersigned would be greatly appreciated.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. 429022001900.

Respectfully submitted,

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